

## § 600.106–08

of Human Factors Engineering Committee, Society of Automotive Engineers, approved September 1973 as revised September 1975), IBR approved for § 600.315–08(c).

(2) SAE J1634, Electric Vehicle Energy Consumption and Range Test Procedure, Cancelled October 2002, IBR approved for §§ 600.116–12(a) and 600.311–12(j) and (k).

(3) SAE J1711, Recommended Practice for Measuring the Exhaust Emissions and Fuel Economy of Hybrid-Electric Vehicles, Including Plug-In Hybrid Vehicles, June 2010, IBR approved for §§ 600.114–12(c) and (f), 600.116–12(b), and 600.311–12(d), (j), and (k).

(d) International Organization for Standardization, Case Postale 56, CH–1211 Geneva 20, Switzerland, (41) 22749 0111, <http://www.iso.org>, or [central@iso.org](mailto:central@iso.org).

(1) ISO/IEC 18004:2006(E), Information technology—Automatic identification and data capture techniques—QR Code 2005 bar code symbology specification, Second Edition, September 1, 2006, IBR approved for § 600.302–12(b).

(2) [Reserved]

[76 FR 39530, July 6, 2011, as amended at 76 FR 57379, Sept. 15, 2011]

## Subpart B—Fuel Economy and Carbon-Related Exhaust Emission Test Procedures

SOURCE: 42 FR 45657, Sept. 12, 1977, unless otherwise noted.

### § 600.106–08 Equipment requirements.

The requirements for test equipment to be used for all fuel economy testing are given in subparts B and C of part 86 of this chapter.

[76 FR 39531, July 6, 2011]

### § 600.107–08 Fuel specifications.

(a) The test fuel specifications for gasoline, diesel, methanol, and methanol-petroleum fuel mixtures are given in § 86.113 of this chapter, except for cold temperature FTP fuel requirements for diesel and alternative fuel vehicles, which are given in paragraph (b) of this section.

(b)(1) Diesel test fuel used for cold temperature FTP testing must com-

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prise a winter-grade diesel fuel as specified in ASTM D975 (incorporated by reference in § 600.011). Alternatively, EPA may approve the use of a different diesel fuel, provided that the level of kerosene added shall not exceed 20 percent.

(2) The manufacturer may request EPA approval of the use of an alternative fuel for cold temperature FTP testing.

(c) Test fuels representing fuel types for which there are no specifications provided in § 86.113 of this chapter may be used if approved in advance by the Administrator.

[76 FR 39531, July 6, 2011]

### § 600.108–08 Analytical gases.

The analytical gases for all fuel economy testing must meet the criteria given in § 86.114 of this chapter.

[42 FR 45657, Sept. 12, 1977. Redesignated at 76 FR 39531, July 6, 2011]

### § 600.109–08 EPA driving cycles.

(a) The FTP driving cycle is prescribed in § 86.115 of this chapter.

(b) The highway fuel economy driving cycle is specified in this paragraph.

(1) The Highway Fuel Economy Driving Schedule is set forth in appendix I of this part. The driving schedule is defined by a smooth trace drawn through the specified speed versus time relationships.

(2) The speed tolerance at any given time on the dynamometer driving schedule specified in appendix I of this part, or as printed on a driver's aid chart approved by the Administrator, when conducted to meet the requirements of paragraph (b) of § 600.111 is defined by upper and lower limits. The upper limit is 2 mph higher than the highest point on trace within 1 second of the given time. The lower limit is 2 mph lower than the lowest point on the trace within 1 second of the given time. Speed variations greater than the tolerances (such as may occur during gear changes) are acceptable provided they occur for less than 2 seconds on any occasion. Speeds lower than those prescribed are acceptable provided the vehicle is operated at maximum available power during such occurrences.

(3) A graphic representation of the range of acceptable speed tolerances is found in § 86.115 of this chapter.

(c) The US06 driving cycle is set forth in appendix I of part 86 of this chapter.

(d) The SC03 driving cycle is set forth in appendix I of part 86 of this chapter.

[71 FR 77933, Dec. 27, 2006, as amended at 76 FR 39531, July 6, 2011]

#### § 600.110-08 Equipment calibration.

The equipment used for fuel economy testing must be calibrated according to the provisions of §§ 86.116 and 86.216 of this chapter.

[71 FR 77933, Dec. 27, 2006]

#### § 600.111-08 Test procedures.

This section provides test procedures for the FTP, highway, US06, SC03, and the cold temperature FTP tests. Testing shall be performed according to test procedures and other requirements contained in this part 600 and in part 86 of this chapter, including the provisions of part 86, subparts B, C, and S. Test hybrid electric vehicles using the procedures of SAE J1711 (incorporated by reference in § 600.011). For FTP testing, this generally involves emission sampling over four phases (bags) of the UDDS (cold-start, transient, warm-start, transient); however, these four phases may be combined into two phases (phases 1 + 2 and phases 3 + 4). Test plug-in hybrid electric vehicles using the procedures of SAE J1711 (incorporated by reference in § 600.011) as described in § 600.116-12. Test electric vehicles using the procedures of SAE J1634 (incorporated by reference in § 600.011) as described in § 600.116-12.

(a) *FTP testing procedures.* The test procedures to be followed for conducting the FTP test are those prescribed in §§ 86.127 through 86.138 of this chapter, as applicable, except as provided for in paragraph (b)(5) of this section. (The evaporative loss portion of the test procedure may be omitted unless specifically required by the Administrator.)

(b) *Highway fuel economy testing procedures.* (1) The Highway Fuel Economy Dynamometer Procedure (HFET) consists of a preconditioning highway driving sequence and a measured highway driving sequence.

(2) The HFET is designated to simulate non-metropolitan driving with an average speed of 48.6 mph and a maximum speed of 60 mph. The cycle is 10.2 miles long with 0.2 stop per mile and consists of warmed-up vehicle operation on a chassis dynamometer through a specified driving cycle. A proportional part of the diluted exhaust emission is collected continuously for subsequent analysis of hydrocarbons, carbon monoxide, carbon dioxide using a constant volume (variable dilution) sampler. Diesel dilute exhaust is continuously analyzed for hydrocarbons using a heated sample line and analyzer. Methanol and formaldehyde samples are collected and individually analyzed for methanol-fueled vehicles (measurement of methanol and formaldehyde may be omitted for 1993 through 1994 model year methanol-fueled vehicles provided a HFID calibrated on methanol is used for measuring HC plus methanol). Methanol, ethanol, formaldehyde, and acetaldehyde samples are collected and individually analyzed for ethanol fueled vehicles.

(3) Except in cases of component malfunction or failure, all emission control systems installed on or incorporated in a new motor vehicle must be functioning during all procedures in this subpart. The Administrator may authorize maintenance to correct component malfunction or failure.

(4) The provisions of § 86.128 of this chapter apply for vehicle transmission operation during highway fuel economy testing under this subpart.

(5) Section 86.129 of this chapter applies for determination of road load power and test weight for highway fuel economy testing. The test weight for the testing of a certification vehicle will be that test weight specified by the Administrator under the provisions of part 86 of this chapter. The test weight for a fuel economy data vehicle will be that test weight specified by the Administrator from the test weights covered by that vehicle configuration. The Administrator will base his selection of a test weight on the relative projected sales volumes of the various test weights within the vehicle configuration.